



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,123	04/07/2006	Herminio Navalon Carretero	HERR 22.502(100700-00162)	9214
26304 7590 11/26/2008 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585				
EXAMINER COLEMAN, KEITH A				
ART UNIT 3747		PAPER NUMBER		
MAIL DATE 11/26/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/575,123

Applicant(s)NAVALON CARRETERO,
HERMINIO**Examiner**

KEITH COLEMAN

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4,5, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. As best understood from the previous actions, these claims 4 and 5 were interpreted to be dependent on claim 1.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 4, 6, and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al., (US Patent No. 4,391,132) in view of Andrews et al. (US Patent No. 5,482,013)

With regards to claim 1, the patent to Egami et al. discloses a module (9) for heating the intake gases of an internal combustion engine (Col. 1, Lines 1-6, Fig. 1), **the module comprising**; electronic temperature control (15) (Figure 4) which is used for heating the gases circulating through the intake pipe (3) by means of a heating element (10) connected to a battery (17, Figure 1) from which it receives a supply via a power control circuit (105) controlled by an electronic control unit (ECU) (16) of the engine (1), **the frame to which** the power control circuit is adhered (15), and - the heating element (10), consisting of a least one heating resistance (10), is installed (Fig. 1), both forming the same module to allow electronic control of the temperature of the intake gases (Fig.

1) except positively disclosing wherein the power control circuit comprises a control logic to which is connected to a single temperature sensor, and at least one power switch which controls the heating elements.

The patent Andrews discloses wherein the power control circuit comprises a control logic (12) to which is connected to a single temperature sensor (20), and at least one power switch which controls the heating elements (26 and 28).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the circuit of Egami et al. with wherein the power control circuit comprises a control logic to which is connected to a single temperature sensor, and at least one power switch which controls the heating elements in view of the teaching to Andrews et al., in order to supply heated air to the internal combustion engine (Col. 3, Lines 20-30 from Andrews)

With regards to claim 2, the patent to Egami et al. discloses a module (9) for heating the intake gases of an internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1, characterized in that the power control circuit incorporates essentially a control logic (15, Figure 4), to which is connected a temperature sensor (12 and 11), and at least one power switch (107) which controls the heating element (10).

With regards to claim 4, the patent to Egami et al. discloses a module (9) for heating the intake gases of internal combustion engine (1), incorporating an electronic

temperature control (15) (Figure 4), according to claim 2, characterized in that the power control circuit (105) is provided with a power switch (107) for each of the heating resistances configuring the heating element (10).

With regards to claim 6, the patent to Egami et al. further discloses a module (9) for heating the intake gases of internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1, characterized in that the temperature sensor (10) is thermally connected to the frame (9), since it is integrated in the actual power control circuit (105) to provide the temperature control (15).

With regards to claim 7, the patent to Egami et al. further discloses a module (9) for heating the intake gases (3) of internal combustion engine (1), incorporating an electronic temperature control (16), according to claims 1, characterized in that the temperature sensor (11 and 12) is inserted in the wall of the intake manifold (3) for providing the temperature control (16).

With regards to claim 8, the patent to Egami et al. discloses a module (9) for heating the intake gases (3) of internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1, characterized in that the temperature sensor (11 and 12) is integrated in the heating element (10) for providing the temperature control (16).

With regards to claim 9, the patent to Egami et al. discloses a module (9) for heating the intake gases (3) of internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1 and further discloses that the temperature sensor (11 and 12) is located downstream from the heating element (10). (Col. 2, Lines 36-46)

With regards to claim 10, the patent to Egami et al. discloses a module (9) for heating the intake gases of internal combustion engine (1), incorporating an electronic temperature control (15), according to claim 1, characterized in that the heating element (10) consists of at least one resistance of the strip type (Col. 2, Lines 36-46)

5. Claims 3, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al (US Patent No. 4,391,132) and Andrews et al. (US Patent No. 5,482,013) in view of Thimmesch et al, (Patent Publication 2002/0096155 A1).

With regards to claim 3, the patent to Egami et al meets the limitations of claims 1 and 2. Egami et al does not further disclose that the power control circuit (105) is mounted on a ceramic base adhered with a heat conducting product to the frame itself.

Thimmesch et al. discloses a module for heating the intake gases of an internal combustion engine mounted on a ceramic base (48) adhered with a heat-conducting product to the frame itself (Paragraph 22). It would have been obvious to a person of

ordinary skill in the art at the time the invention was made to provide the heating module of Egami et al. with the ceramic base in view of the teaching to Thimmesch et al., in order to insulate the circuits from the heat radiating from the heating elements. Egami et al. and Thimmesch et al. are analogous art because they are from the same field of endeavor of heaters. The suggestion/ motivation would have been that an insulator may be formed of a ceramic material known in the art to provide the desired thermal and electrical insulating properties. Insulator includes cavities to accommodate and position heating element therein (Thimmesch, Paragraph 22).

With regards to claim 11-12, the patent to Egami et al. discloses all the limitations of claim 10.

Egami et al. does not disclose the heating elements characterized in that there are separate ceramic insulants for each resistance and that the ceramic insulants form a single monobloc part, which includes all the resistances.

The patent publication to Thimmesch et al. discloses a module according to claim 10, characterized in that there are separate ceramic insulants (11) for each resistance. (Paragraph 22, Fig 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the heating element of Egami et al. with ceramic insulants and combine the insulants into a monobloc in view of the teaching to Thimmesch et al., in order to use the desired thermal and electrical properties normally found in ceramics (Thimmesch et al., Paragraph 22).

6. Claims 5 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (US Patent No. 4,391,132) and Andrews et al. (US Patent No. 5,482,013)

With regards to claim 5, the patent to Egami et al. discloses a module (9) for heating the intake gases of internal combustion engine (1) of claim 2 [interpreted to be claim 1], wherein the power control circuit (105) runs a supply connection which is led to the positive terminal of the battery (17), wherein an electrical conductor which connects it to the heating element (10), and a control connector (15) which transmits the temperature signals picked up by the temperature sensor (11 and 12) to the electronic control unit (16) of the engine (1), which responds by transmitting signals to the control circuit for regulating the power applied to the heating element (10) via the control logic (15) and the power switches (107) (Fig 1, Col. 5, Lines 39-64).

Egami et al. does not disclose **the heating element being** connected to the earth of the metal frame at its other end. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the ground of Egami et al. with the earth, in order to complete the circuit.

With regards to claim 18, the patent to Egami et al. discloses all the limitations of claim 5 and further discloses that the electrical conductor (10b) is integrated and hermetically sealed (10a) inside the module (9) to prevent tampering and possible

supply of the heating element (10) from the outside. It should be noted that printed plates seal the wire strips.

7. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (US Patent No. 4,391,132) and Andrews et al. (US Patent No. 5,482,013) in view of Sadr, (US Patent No. 5,445,782).

With regards to claims 13 and 14, the patent to Egami et al. discloses all the limitations of claim 1. Egami et al. does not disclose said module has been installed in manifolds composed of materials with a low operating temperature or furthermore, that it is installed in a plastic intake manifold.

The patent to Sadr discloses a low operating temperature manifold and a plastic intake manifold (Col.5, Lines 30-39). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the material of the manifold of Egami et al. with a low temperature manifold or plastic intake manifold in view of the teaching to Sadr, in order to use low temperature operating materials such as plastics because of their beneficial characteristics such as lighter weight and easier and cheaper to manufacture compared to metals. In addition, because of the characteristics of modern plastics, more and more automotive parts are being produced using plastic (Sadr, Col.1 Lines 20-25). Both Egami et al. and Sadr are analogous art since they both are in the endeavor of inlet manifolds.

8. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Egami et al. (US Patent No. 4,391,132) and Andrews et al. (US Patent No. 5,482,013) in view of Prust, (US Patent No. 6,152,117).

With regards to claim 15, the patent to Egami et al. discloses all the limitations of claim 1. Egami et al. does not disclose that the frame is of metal, preferably aluminum. Prust discloses that the frame is of aluminum metal (Col. 2, Lines 64-68 through Col. 3, Lines 1-7). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the frame of the Egami et al. with metal or aluminum in view of the teaching to Prust, in order to use the desired thermal and electrical properties normally found in aluminum.

With regards to claim 16, the patent to Egami et al. discloses all the limitations of claim 7. Egami et al. does not further disclose that the connection of the temperature sensor to the control circuit is made by means of cables. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute the connecting element between the temperature sensor & control circuit of the Egami et al. with cable, in order to complete the circuit between the temperature sensor and the control circuit.

With regards to claim 17, the patent to Egami et al. discloses all the limitations of claim 16. Egami et al. does not further disclose using a connector between the cable

and temperature sensor. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the connecting element between the cable and temperature sensor of the Egami et al. with a connector, in order to complete the circuit between the cable and temperature sensor.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Trotta et al. (US Patent No. 5,094,198) shows the current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH COLEMAN whose telephone number is (571)270-3516. The examiner can normally be reached on 5:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571)272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen K. Cronin/
Supervisory Patent Examiner, Art
Unit 3747

KAC
/K. C./
Examiner, Art Unit 3747